



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/598,515

09/01/2006

Seiichi Akagi

MIYOSH0008

6701

24203 7590 08/21/2009

GRIFFIN & SZIPL, PC

SUITE PH-1

2300 NINTH STREET, SOUTH

ARLINGTON, VA 22204

EXAMINER

PAK, HANNAH J

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

08/21/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/598,515	Applicant(s) AKAGI ET AL.	
	Examiner Hannah Pak	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 July 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>07/30/2009</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 07/30/2009 has been entered.
2. All outstanding rejections, except for those maintained below, are withdrawn in light of applicant's amendment filed on 07/30/2009.
3. The text of those actions of Title 35, U.S. Code not included in this action can be found in a prior office action.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Art Unit: 1796

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4 obviousness-type double patenting rejections are set forth below:

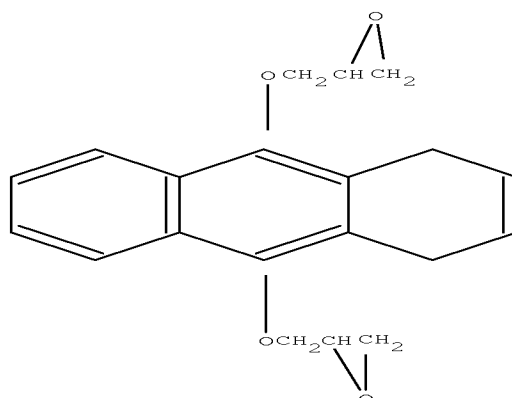
Double Patenting I

4. Claims 1, 3-5, and 11 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 13-18 of copending Application No. 11/572,162, hereinafter referred to as "U.S. Appl. '162" (US 2009/0143511) in view of Nakamura et al. (JP 05-283560). Although the conflicting claims are not identical, they are not patentably distinct from each other.

Both the instant application and the U.S. Appl. '162 claim an epoxy-resin molding material containing an epoxy resin and a hardening agent. Both the instant application and the U.S. Appl. '162 also claim a hardening accelerator, which is an adduct of a tertiary phosphine compound and a quinone compound. The secondary amino group-containing silane-coupling agent recited in both the instant application and the U.S. Appl. '162 contain the same compound having corresponding formulae (Compare claim 11 of the instant application and claim 18 of the U.S. Appl. '162).

The U.S. Appl. '162 does not specifically mention employing the epoxy compound having the same formula as the instant application.

However, Nakamura et al. disclose a semiconductor device using the epoxy compound having the following formula below (Paragraph 43, Formula 9):



This formula corresponds to formula 1 in claim 1, when $n = 0$, R^1 or R^2 groups would not be necessary. Nakamura et al. further disclose this epoxy resin with sealing (or encapsulating) material is excellent in reliability, including humidity-tolerant reliability and reliability over heat-resistant (Paragraphs 1-2). The semiconductor device would also have improved crack resistant characteristic (Paragraph 3).

Given the above teachings, it would have been obvious to one of ordinary skill in the art at the time of the invention to employ the compound having the specified formula taught by Nakamura et al. in the encapsulating epoxy resin molding material of Ikezawa et al. to obtain excellent properties or characteristics.

This is a provisional obviousness-type double patenting rejection.

5. Claims 1, 3-5, and 11 directed to an invention not patentably distinct from claims 1 and 13-18 of copending Application No. 11/572,162, hereinafter referred to as "U.S. Appl. '162" (US 2009/0143511). Specifically, refer to paragraph 4 above.

The U.S. Patent and Trademark Office normally will not institute an interference between applications or a patent and an application of common ownership (see MPEP

Art Unit: 1796

Chapter 2300). Commonly assigned U.S. Appl. '162, discussed above, would form the basis for a rejection of the noted claims under 35 U.S.C. 103(a) if the commonly assigned case qualifies as prior art under 35 U.S.C. 102(e), (f) or (g) and the conflicting inventions were not commonly owned at the time the invention in this application was made. In order for the examiner to resolve this issue, the assignee can, under 35 U.S.C. 103(c) and 37 CFR 1.78(c), either show that the conflicting inventions were commonly owned at the time the invention in this application was made, or name the prior inventor of the conflicting subject matter.

A showing that the inventions were commonly owned at the time the invention in this application was made will preclude a rejection under 35 U.S.C. 103(a) based upon the commonly assigned case as a reference under 35 U.S.C. 102(f) or (g), or 35 U.S.C. 102(e) for applications pending on or after December 10, 2004.

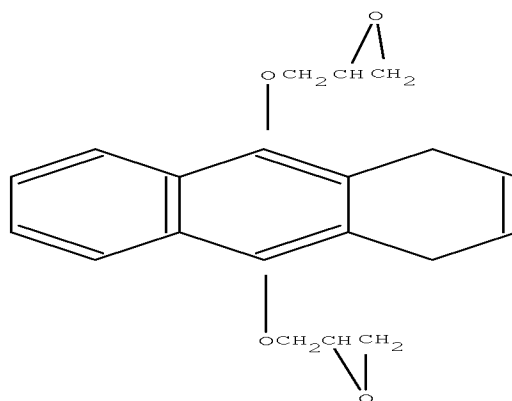
Double Patenting II

6. Claims 1, 3-5, and 11 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 13-18 of copending Application No. 11/995,372, hereinafter referred to as "U.S. Appl. '372" (US 2009/0137717) in view of Nakamura et al. (JP 05-283560). Although the conflicting claims are not identical, they are not patentably distinct from each other.

Both the instant application and the U.S. Appl. '372 claim an epoxy-resin molding material containing an epoxy resin and a hardening agent. Both the instant application and the U.S. Appl. '372 also claim a hardening accelerator, which is an adduct of a

The U.S. Appl. '372 does not specifically mention employing the epoxy compound having the same formula as the instant application.

However, Nakamura et al. disclose a semiconductor device using the epoxy compound having the following formula below (Paragraph 43, Formula 9):



This formula corresponds to formula 1 in claim 1, when $n = 0$, R^1 or R^2 groups would not be necessary. Nakamura et al. further disclose this epoxy resin with sealing (or encapsulating) material is excellent in reliability, including humidity-tolerant reliability and reliability over heat-resistant (Paragraphs 1-2). The semiconductor device would also have improved crack resistant characteristic (Paragraph 3).

Given the above teachings, it would have been obvious to one of ordinary skill in the art at the time of the invention to employ the compound having the specified formula

Art Unit: 1796

taught by Nakamura et al. in the encapsulating epoxy resin molding material of Ikezawa et al. to obtain excellent properties or characteristics.

This is a provisional obviousness-type double patenting rejection.

7. Claims 1, 3-5, and 11 directed to an invention not patentably distinct from claims 1 and 13-18 of copending Application No. 11/995,372, hereinafter referred to as "U.S. Appl. '372" (US 2009/0137717). Specifically, refer to paragraph 6 above.

The U.S. Patent and Trademark Office normally will not institute an interference between applications or a patent and an application of common ownership (see MPEP Chapter 2300). Commonly assigned U.S. Appl. '372, discussed above, would form the basis for a rejection of the noted claims under 35 U.S.C. 103(a) if the commonly assigned case qualifies as prior art under 35 U.S.C. 102(e), (f) or (g) and the conflicting inventions were not commonly owned at the time the invention in this application was made. In order for the examiner to resolve this issue, the assignee can, under 35 U.S.C. 103(c) and 37 CFR 1.78(c), either show that the conflicting inventions were commonly owned at the time the invention in this application was made, or name the prior inventor of the conflicting subject matter.

A showing that the inventions were commonly owned at the time the invention in this application was made will preclude a rejection under 35 U.S.C. 103(a) based upon the commonly assigned case as a reference under 35 U.S.C. 102(f) or (g), or 35 U.S.C. 102(e) for applications pending on or after December 10, 2004.

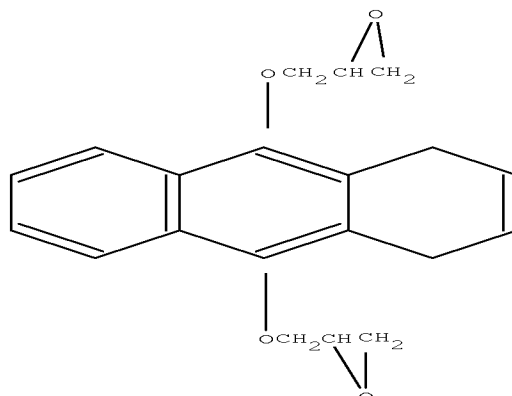
Double Patenting III

8. Claims 1, 3-6, and 11 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 8-11, and 13-16 of copending Application No. 12/097,319, hereinafter referred to as "U.S. Appl. '319" (US 2009/0062430) in view of Nakamura et al. (JP 05-283560). Although the conflicting claims are not identical, they are not patentably distinct from each other.

Both the instant application and the U.S. Appl. '319 claim an epoxy-resin molding material for sealing containing an epoxy resin, an inorganic filler, and a hardening (or curing) agent. Both the instant application and the U.S. Appl. '319 also claim a hardening accelerator, which is an adduct of a tertiary phosphine compound and a quinone compound. One example of the hardening accelerator both applications recite is the triphenylphosphine. The secondary amino group-containing silane-coupling agent recited in both the instant application and the U.S. Appl. '319 contains the same compound having corresponding formulae (Compare claim 11 of the instant application and claim 16 of the U.S. Appl. '319).

The U.S. Appl. '316 does not specifically mention employing the epoxy compound having the same formula as the instant application.

However, Nakamura et al. disclose a semiconductor device using the epoxy compound having the following formula below (Paragraph 43, Formula 9):



This formula corresponds to formula 1 in claim 1, when $n = 0$, R^1 or R^2 groups would not be necessary. Nakamura et al. further disclose this epoxy resin with sealing (or encapsulating) material is excellent in reliability, including humidity-tolerant reliability and reliability over heat-resistant (Paragraphs 1-2). The semiconductor device would also have improved crack resistant characteristic (Paragraph 3).

Given the above teachings, it would have been obvious to one of ordinary skill in the art at the time of the invention to employ the compound having the specified formula taught by Nakamura et al. in the encapsulating epoxy resin molding material of Ikezawa et al. to obtain excellent properties or characteristics.

This is a provisional obviousness-type double patenting rejection.

9. Claims 1, 3-6, and 11 directed to an invention not patentably distinct from claims 1, 8-11, and 13-16 of copending Application No. 12/097,319, hereinafter referred to as "U.S. Appl. '319" (US 2009/0062430). Specifically, refer to paragraph 8 above.

The U.S. Patent and Trademark Office normally will not institute an interference between applications or a patent and an application of common ownership (see MPEP

Art Unit: 1796

Chapter 2300). Commonly assigned U.S. Appl. '319, discussed above, would form the basis for a rejection of the noted claims under 35 U.S.C. 103(a) if the commonly assigned case qualifies as prior art under 35 U.S.C. 102(e), (f) or (g) and the conflicting inventions were not commonly owned at the time the invention in this application was made. In order for the examiner to resolve this issue, the assignee can, under 35 U.S.C. 103(c) and 37 CFR 1.78(c), either show that the conflicting inventions were commonly owned at the time the invention in this application was made, or name the prior inventor of the conflicting subject matter.

A showing that the inventions were commonly owned at the time the invention in this application was made will preclude a rejection under 35 U.S.C. 103(a) based upon the commonly assigned case as a reference under 35 U.S.C. 102(f) or (g), or 35 U.S.C. 102(e) for applications pending on or after December 10, 2004.

Double Patenting IV

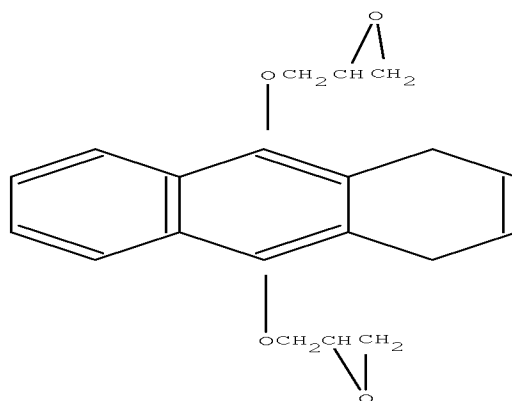
10. Claims 1, 3-5, and 11 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 15-16, and 18-20 of copending Application No. 11/572,155, hereinafter referred to as "U.S. Appl. '155" (US 2008/0039556) in view of Nakamura et al. (JP 05-283560). Although the conflicting claims are not identical, they are not patentably distinct from each other.

Both the instant application and the U.S. Appl. '155 claim an epoxy-resin molding material for sealing containing an epoxy resin and a hardening agent. Both the instant application and the U.S. Appl. '155 also claim a hardening accelerator, which is an

adduct of a tertiary phosphine compound and a quinone compound. The secondary amino group-containing silane-coupling agent recited in both the instant application and the U.S. Appl. '155 contains the same compound having corresponding formulae (Compare claim 11 of the instant application and claim 20 of the U.S. Appl. '155).

The U.S. Appl. '316 does not specifically mention employing the epoxy compound having the same formula as the instant application.

However, Nakamura et al. disclose a semiconductor device using the epoxy compound having the following formula below (Paragraph 43, Formula 9):



This formula corresponds to formula 1 in claim 1, when $n = 0$, R^1 or R^2 groups would not be necessary. Nakamura et al. further disclose this epoxy resin with sealing (or encapsulating) material is excellent in reliability, including humidity-tolerant reliability and reliability over heat-resistant (Paragraphs 1-2). The semiconductor device would also have improved crack resistant characteristic (Paragraph 3).

Given the above teachings, it would have been obvious to one of ordinary skill in the art at the time of the invention to employ the compound having the specified formula

Art Unit: 1796

taught by Nakamura et al. in the encapsulating epoxy resin molding material of Ikezawa et al. to obtain excellent properties or characteristics.

This is a provisional obviousness-type double patenting rejection.

11. Claims 1, 3-5, and 11 directed to an invention not patentably distinct from claims 1, 15-16, and 18-20 of copending Application No. 11/572,155, hereinafter referred to as "U.S. Appl. '155" (US 2008/0039556). Specifically, refer to paragraph 10 above.

The U.S. Patent and Trademark Office normally will not institute an interference between applications or a patent and an application of common ownership (see MPEP Chapter 2300). Commonly assigned U.S. Appl. '155, discussed above, would form the basis for a rejection of the noted claims under 35 U.S.C. 103(a) if the commonly assigned case qualifies as prior art under 35 U.S.C. 102(e), (f) or (g) and the conflicting inventions were not commonly owned at the time the invention in this application was made. In order for the examiner to resolve this issue, the assignee can, under 35 U.S.C. 103(c) and 37 CFR 1.78(c), either show that the conflicting inventions were commonly owned at the time the invention in this application was made, or name the prior inventor of the conflicting subject matter.

A showing that the inventions were commonly owned at the time the invention in this application was made will preclude a rejection under 35 U.S.C. 103(a) based upon the commonly assigned case as a reference under 35 U.S.C. 102(f) or (g), or 35 U.S.C. 102(e) for applications pending on or after December 10, 2004.

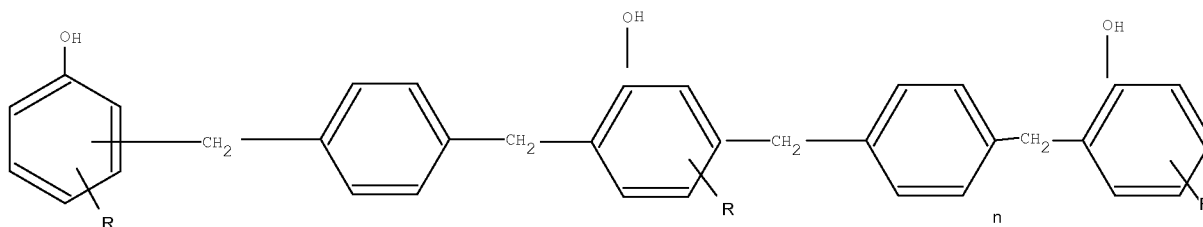
Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

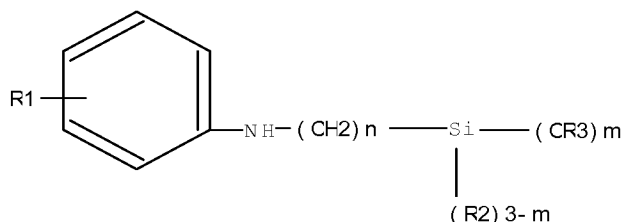
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 1-12, 18-20, 22-24, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ikezawa et al. (US 2003/0201548) in view of Nakamura et al. (JP 05-283560).

With respect to claims 1-5, 6-11, 20 and 22-23, Ikezawa et al. disclose an encapsulating epoxy resin molding material suitable for a thin semiconductor device comprising an epoxy resin, a curing (or hardening) agent, and a silane coupling agent having a secondary amino group, (Paragraphs 1 and 12). The curing (or hardening) agent contains a compound represented by the formula:



wherein R is selected from a hydrogen atom and a C₁₋₁₀ substituted or unsubstituted monovalent hydrocarbon group, and n is an integer of 0-10 (Paragraphs 34-35). This corresponds to the formula II recited in claim 2. The secondary amino group-containing silane-coupling agent also contains a compound having the formula:



Wherein R¹ is selected from a hydrogen atom, a C₁₋₆ alkyl group and a C₁₋₂ alkoxy group, R² is selected from a C₁₋₆ alkyl group and a phenyl group, R³ represents a methyl or ethyl group, n is an integer of 1-5, and m is an integer of 1-3 (Paragraphs 39-40).

This formula corresponds to the formula 3 recited in claim 11. Moreover, the encapsulating epoxy resin molding material further comprises preferably 75% by weight of inorganic filler, i.e., encompassed by those recited in claims 7 and 8, a curing (hardening) accelerator and another coupling agent (Paragraphs 21-22 and 103-105). Ikezawa et al. also disclose examples of curing (hardening) promoter or accelerator, including triphenylphosphine tetraphenyl borate, and an adduct of organic phosphine and quinone compound (Paragraph 110).

Regarding claims 12 and 24, Ikezawa et al. suggest previously melt-mixing the epoxy resin and curing (hardening) agent (Paragraphs 25 and 33).

As to claims 18-19 and 26, Ikezawa et al. disclose employing a compound in the encapsulating epoxy resin molding material having the formula:

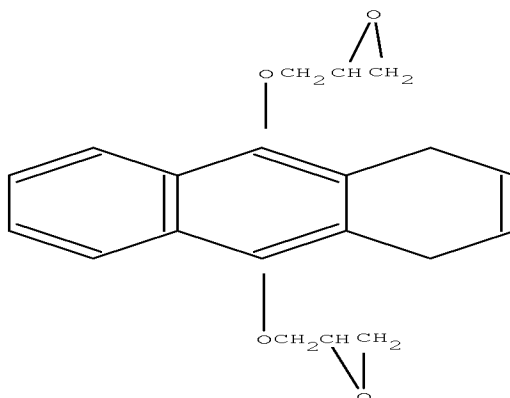
Mg_{1-x}Al_x(OH)₂(CO₃)_{x/2} * mH₂O, wherein 0 < x ≤ 0.5 and m is an integer (Paragraph 30).

Ikezawa et al. also teach a semiconductor device comprising an active element with encapsulating epoxy resin molding material (Paragraph 135).

Art Unit: 1796

Ikezawa et al. do not mention employing the specific epoxy resin having the formula recited in claim 1.

However, Nakamura et al. disclose a semiconductor device using the epoxy compound having the following formula below (Paragraph 43, Formula 9):



This formula corresponds to formula 1 in claim 1, when $n = 0$, R^1 or R^2 groups would not be necessary. Nakamura et al. further disclose this epoxy resin with sealing (or encapsulating) material is excellent in reliability, including humidity-tolerant reliability and reliability over heat-resistant (Paragraphs 1-2). The semiconductor device would also have improved crack resistant characteristic (Paragraph 3).

Given the above teachings, it would have been obvious to one of ordinary skill in the art at the time of the invention to employ the compound having the specified formula taught by Nakamura et al. in the encapsulating epoxy resin molding material of Ikezawa et al. to obtain excellent properties or characteristics.

13. Claims 13-17, 21, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ikezawa et al. (US 2003/0201548) in view of Nakamura et al. (JP 05-

Art Unit: 1796

283560) as applied to claims 1-12, 18-20, 22-24, and 26 above, and further in view of Isshiki et al. (US 6,040, 395) and Admitted Prior Art (see Page 33 of the present specification).

The disclosures with respect to Ikezawa et al. and Nakamura et al. in paragraph 12 are incorporated here by reference. They do not mention the specific formula of the silicon-containing compound polymer and its specific properties.

However, Isshiki et al. teach epoxy-functional organoalkoxysilane, for example, 3-glycidoxypropyltrimethoxysilane, with the general formula $R^1Si(OR^4)_3$, wherein R^1 represents epoxy functional monovalent organic group, and R^4 represents alkyl groups of 1-4 carbon atoms, including methyl, ethyl, propyl and butyl, in curable epoxy resins with sealants of electrical components (compare Col. 3, lines 34-53 with page 34 of the specification, Col. 1, lines 45-51, and Col. 4, lines 22-27). The silicon bonded organic groups can also include hydroxyl group, aryl groups, such as phenyl, and alkenyl groups, such as vinyl (Col. 3, lines 7-24). This formula corresponds to the formulae recited in claims 13-14, 21, and 25. Isshiki et al. further suggest this silicone can protect the electrical elements, including semiconductor chips and resistors, from internal stresses originating from the expansion and shrinkage of the cured resin sealant (Col. 1, lines 18-25).

Given the above teachings, it would have been obvious to one of ordinary skill in the art at the time of the invention to employ the silicon-containing compound polymer having the specific formula taught by Isshiki et al. in the encapsulating epoxy-resin

Art Unit: 1796

molding material of Ikezawa et al. to protect its electrical elements from internal stresses for sealants.

Moreover, the applicant acknowledges the silicon-containing polymers (F) are commercially sold under the trade name Ay42-119, manufactured by Dow Corning Torary Silicone Co., LTD (see page 33 of the specification). Thus, it would have been obvious to use silicon-containing polymers (F) in the encapsulating epoxy resin molding material taught by Ikezawa et al. since the product is commercially sold and available to the public.

As to specific properties, epoxy equivalence and softening temperature, of the silicon containing polymers recited in claims 13-15, 17, 21 and 25, Isshiki et al. teach the same encapsulating (or sealant) epoxy resin molding material of electrical components made of the same epoxy resin, curing agents, and curing accelerator (Col. 4, lines 22-25 and Col. 6, lines 35-40). Therefore, one of ordinary skill in the art would have reasonably expected that the silicon-containing polymers taught or suggested by Isshiki et al. would necessarily have the same properties of the claimed epoxy resin molding material, including the same epoxy equivalence and softening temperature (see *MPEP* § 2112.01).

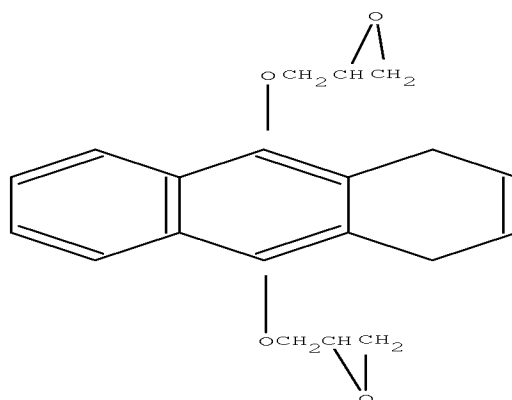
Response to Arguments

14. The applicants' remarks filed 07/30/2009 are fully considered but are not found persuasive. Specifically, the applicants argue that Nakamura's formula 9 is substantially different from the claimed general formula I because one compound is an

Art Unit: 1796

anthracene compound with its ring conjugated and another compound is anthracene compound that is reduced (see Page 14 of the Applicants' Arguments). The applicants also argue that it is difficult to manufacture Nakamura's formula 9 while the synthesis of the claimed compound is at ease (see Page 15 of the Applicants' Remarks). The applicants further argue that the effect of their compound is different from that of Nakamura's disclosure, referring to the description in paragraph 8 of the present specification as support (see Page 15 of the Applicants' Remarks).

However, Nakamura's formula is not substantially different from the claimed general formula I. As acknowledged by the applicants, both compounds taught by Nakamura and the applicants are anthracene compound. Nakamura et al. disclose a semiconductor device using the epoxy compound having the following formula below (Paragraph 43, Formula 9):



This formula corresponds to formula 1 in claim 1, when n and m is equal to 0, which makes R¹ or R² groups not necessary. Thus, the compound taught by Nakamura is included by the formula recited in claim 1. Although Nakamura may not teach the same advantages or effects as the applicants, there are motivational reasons in why the

Art Unit: 1796

compound taught by Nakamura can be used. As the applicants pointed out in their remarks, the compound taught by Nakamura has in addition to improved resistant properties, excellent flame resistance. Also, the compound of Nakamura and the claimed invention are used in the same epoxy resin molding material. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to employ the compound having the specified formula taught by Nakamura et al. in the encapsulating epoxy resin molding material of Ikezawa et al. to obtain excellent properties or characteristics. Moreover, mere conclusory statements are not objective evidence, *see MPEP* § 2149. The applicants allegedly claim that their compound has superior characteristics than the compound taught by Nakamura, only having a description in their present specification as support. The applicants also allegedly claim their claimed invention is easier to make. Even if it is true, the advantages and benefits of the compound taught by Nakamura et al. outweigh the disadvantages the applicants allegedly claim about Nakamura's compound. Accordingly, the declaration and the arguments fail to rebut the prima facie case of obviousness established in the record.

Conclusion

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hannah Pak whose telephone number is (571) 270-5456. The examiner can normally be reached on Monday - alternating Fridays (7:30 am - 5 pm).

Art Unit: 1796

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Hannah Pak
Examiner
Art Unit 1796

/HP/

/Vasu Jagannathan/
Supervisory Patent Examiner, Art Unit 1796